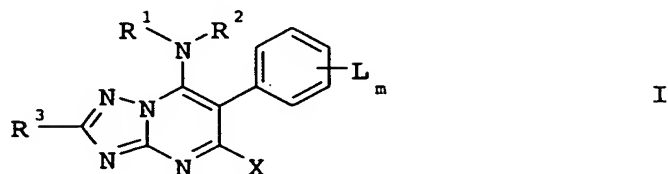


We claim:

1. A 2-substituted triazolopyrimidine of the formula I



in which the substituents are as defined below:

L independently of one another are halogen, cyano, nitro, C₁-C₆-alkyl, C₂-C₁₀-alkenyl, C₂-C₁₀-alkynyl, C₁-C₆-haloalkyl, C₂-C₁₀-haloalkenyl, C₁-C₆-alkoxy, C₂-C₁₀-alkenyloxy, C₂-C₁₀-alkynyloxy, C₁-C₆-haloalkoxy, -C(=O)-A or S(=O)_pA';

A is hydrogen, hydroxyl, C₁-C₈-alkyl, C₂-C₈-alkenyl, C₁-C₈-alkoxy, C₁-C₆-haloalkoxy, C₁-C₈-alkylamino or di-(C₁-C₈-alkyl)amino;

A' is hydrogen, C₁-C₈-alkyl or C₁-C₆-haloalkyl;

p is 0, 1 or 2;

m is 0, 1, 2, 3, 4 or 5;

X is cyano, C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy or C₁-C₂-haloalkoxy;

R¹, R² independently of one another are hydrogen, C₁-C₈-alkyl, C₁-C₈-haloalkyl, C₃-C₆-cycloalkyl, C₃-C₆-halocycloalkyl, C₂-C₈-alkenyl, C₄-C₁₀-alkadienyl, C₂-C₈-haloalkenyl, C₃-C₆-cycloalkenyl, C₂-C₈-alkynyl, C₂-C₈-haloalkynyl or C₃-C₆-cycloalkynyl, phenyl, naphthyl, or a five- to ten-membered saturated, partially unsaturated or aromatic heterocycle which contains one to four heteroatoms from the group consisting of O, N and S,

R¹ and R² together with the nitrogen atom to which they are attached may also form a five- or six-membered ring which may be interrupted by an atom from the group consisting of O, N and S and/or may carry one or more substituents from the group consisting of halogen, C₁-C₆-alkyl, C₁-C₆-haloalkyl and oxy-C₁-C₃-alkyleneoxy

or in which a nitrogen atom and an adjacent carbon atom may be linked by a C₁-C₄-alkylene chain;

where R¹ and/or R² may be substituted by one to four identical or different groups R^a:

5 R^a is halogen, cyano, nitro, hydroxyl, C₁-C₆-alkyl, C₁-C₆-haloalkyl, C₁-C₆-alkylcarbonyl, C₃-C₆-cycloalkyl, C₁-C₆-alkoxy, C₁-C₆-haloalkoxy, 10 C₁-C₆-alkoxycarbonyl, C₁-C₆-alkylthio, C₁-C₆-alkylamino, di-C₁-C₆-alkylamino, C₂-C₆-alkenyl, C₂-C₆-alkenyloxy, C₃-C₆-alkynyloxy, C₃-C₆-cycloalkyl, phenyl, naphthyl, a five- to 15 ten-membered saturated, partially unsaturated or aromatic heterocycle which contains one to four heteroatoms from the group consisting of O, N and S,

where these aliphatic, alicyclic or aromatic 20 groups for their part may be partially or fully halogenated or may carry one to three groups R^b:

R^b is halogen, cyano, nitro, hydroxyl, mercapto, 25 amino, carboxyl, aminocarbonyl, aminothiocarbonyl, alkyl, haloalkyl, alkenyl, alkenyloxy, alkynyloxy, alkoxy, haloalkoxy, alkylthio, alkylamino, dialkylamino, formyl, alkylcarbonyl, alkylsulfonyl, alkylsulfoxyl, alkoxycarbonyl, alkylcarbonyloxy, 30 alkylaminocarbonyl, dialkylaminocarbonyl, alkylaminothiocarbonyl, dialkylaminothiocarbonyl, where the alkyl groups in these radicals contain 1 to 6 carbon atoms and the alkenyl or alkynyl groups in 35 these radicals contain 2 to 8 carbon atoms;

and/or one to three of the following radicals:

40 cycloalkyl, cycloalkoxy, heterocyclyl, heterocyclyloxy, where the cyclic systems contain 3 to 10 ring members; aryl, aryloxy, arylthio, aryl-C₁-C₆-alkoxy, aryl-C₁-C₆-alkyl, hetaryl, hetaryloxy, hetarylthio, where the 45 aryl radicals preferably contain 6 to 10 ring members and the hetaryl radicals 5 or 6 ring members, where the cyclic systems may be

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partially or fully halogenated or substituted
by alkyl or haloalkyl groups; and

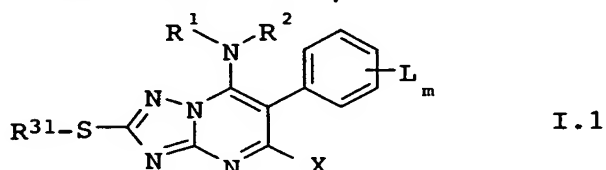
5 R^3 is cyano, hydroxyl, C_1 - C_8 -alkoxy, C_3 - C_8 -alkenyloxy,
 C_1 - C_8 -haloalkoxy, C_3 - C_8 -haloalkenyloxy, NR^1R^2 or
 $S(O)_nR^{31}$;

n is 0, 1 or 2;

10 R^{31} is hydrogen, hydroxyl, C_1 - C_8 -alkyl, C_2 - C_8 -alkenyl
or $-C(=O)-A$.

2. A compound of the formula I.1,

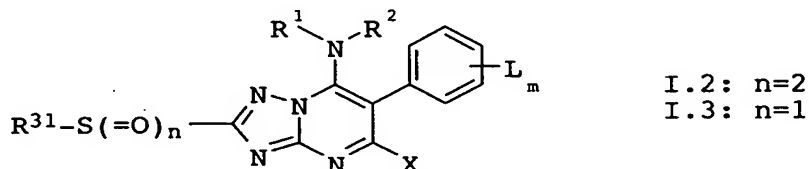
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20 in which the variables and the index m are as defined for
formula I as claimed in claim 1.

3. A compound of the formula I.2 or I.3,

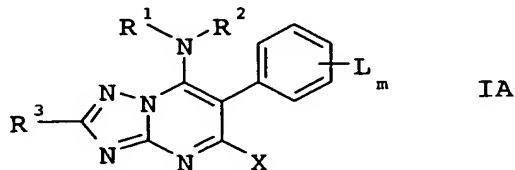
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30 in which the variables and the index m are as defined for
formula I as claimed in claim 1.

4. A compound of the formula IA,

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40 in which

R^3 is cyano, hydroxyl, C_1 - C_8 -alkoxy, C_3 - C_8 -alkenyloxy,
 C_1 - C_8 -haloalkoxy, C_3 - C_8 -haloalkenyloxy or NR^1R^2 ;

and R^1 , R^2 , X and L_m are as defined for formula I according to
45 claim 1.

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5. A compound of the formula I as claimed in any of claims 1 to 4, in which R¹ and R² are as defined below:

5 R¹ is C₁-C₆-alkyl, C₁-C₈-haloalkyl, C₃-C₆-cycloalkyl, C₃-C₆-halocycloalkyl, C₂-C₈-alkenyl, C₂-C₈-haloalkenyl, C₂-C₈-alkynyl; and

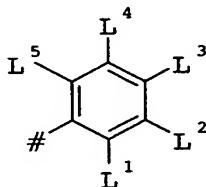
R² is hydrogen or C₁-C₄-alkyl; or

10 R¹ and R² together with the nitrogen atom to which they are attached may also form a five- or six-membered saturated or unsaturated ring which may carry one or two substituents from the group consisting of halogen, C₁-C₆-alkyl and C₁-C₆-haloalkyl.

15

6. A compound of the formula I as claimed in any of claims 1 to 5, in which the phenyl group substituted by L_m is the group A

20



A

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in which # is the point of attachment to the triazolopyrimidine skeleton and

L¹ is fluorine, chlorine, CH₃ or CF₃;

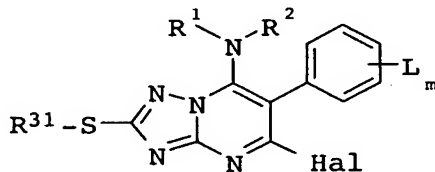
L², L⁴ independently of one another are hydrogen or fluorine;

30 L³ is hydrogen, fluorine, chlorine, cyano, CH₃, SCH₃, OCH₃, SO₂CH₃ or COOCH₃ and

L⁵ is hydrogen, fluorine or CH₃.

7. Process for preparing the compounds of the formula I.1, as claimed in claim 2, in which X is cyano, C₁-C₄-alkoxy or C₁-C₂-haloalkoxy, by reacting compounds of the formula II

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II

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in which Hal is a halogen atom with compound M-X'

M-X'

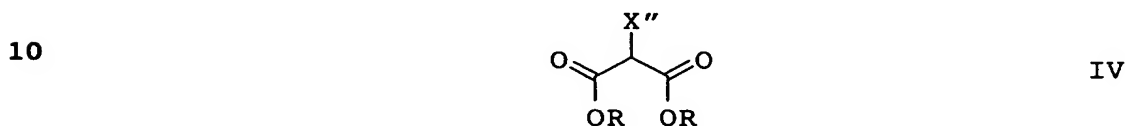
III

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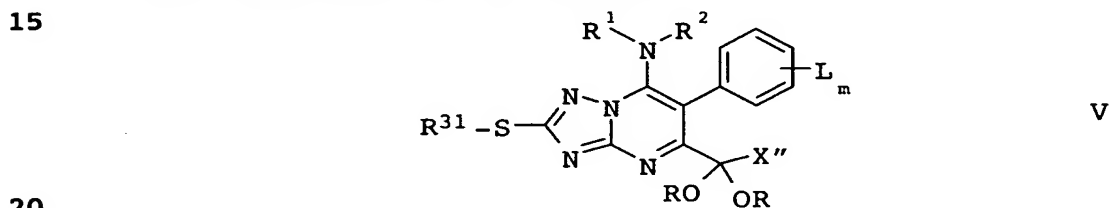
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in which M in formula III is an ammonium, tetraalkylammonium or alkali metal or alkaline earth metal and X' is cyano, C₁-C₄-alkoxy or C₁-C₂-haloalkoxy.

- 5 8. A process for preparing the compounds of the formula I.1 as claimed in claim 2 in which X is C₁-C₄-alkyl, by reacting compounds II as set forth in claim 7 and malonates of the formula IV,

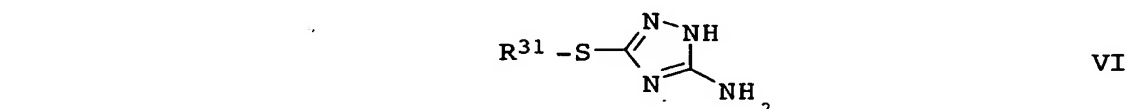


in which X'' is hydrogen or C₁-C₃-alkyl and R is C₁-C₄-alkyl to give compounds of the formula V

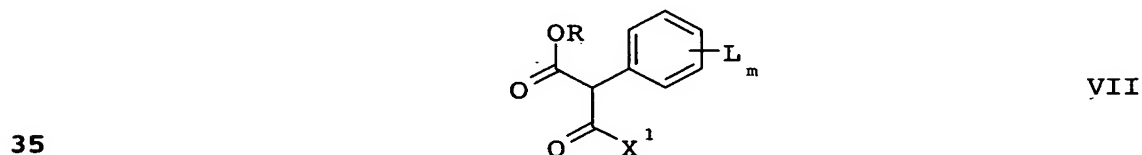


- 20 and hydrolysis of V and decarboxylation.

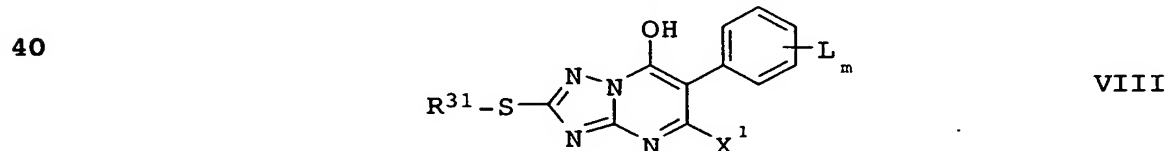
9. A process for preparing the compounds of the formula I.1 as claimed in claim 2 in which X is C₁-C₄-alkyl or C₁-C₄-haloalkyl, by reacting triazoles of the formula VI



- 30 with dicarbonyl compounds of the formula VII,

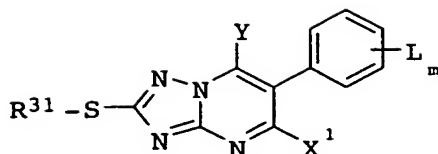


in which R and X¹ are C₁-C₄-alkyl or C₁-C₄-haloalkyl, to give hydroxytriazolopyrimidines of the formula VIII,



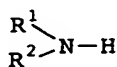
halogenation of VIII to give compounds of the formula IX

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IX

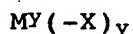
in which Y is halogen, in particular chlorine or bromine, and reaction of IX with amines of the formula X,



X

in which R¹ and R² are as defined in claim 1.

10. A process for preparing compounds of the formula I.1 as claimed in claim 2, in which X is C₁-C₄-alkyl, by reacting halogen compounds of the formula II as set forth in claim 7 with organometallic reagents of the formula XI



XI

in which M is B, Zn or Sn, X is C₁-C₄-alkyl and y corresponds to the valency of M.

11. A process for preparing compounds of the formula I.2 as claimed in claim 3 by oxidizing compounds of the formula I.1 as claimed in claim 2.

12. A process for preparing compounds of the formula IA as claimed in claim 4, by reacting compounds of the formula I.2 as claimed in claim 3 in which n = 2 with compounds of the formula XII



XII

in which M is an ammonium, tetraalkylammonium, alkali metal or alkaline earth metal cation and R³ is as defined for formula IA, under basic conditions.

13. A composition suitable for controlling harmful fungi, which composition comprises a solid or liquid carrier and a compound of the formula I as claimed in claim 1.

14. A method for controlling phytopathogenic harmful fungi, which method comprises treating the fungi or the materials, plants, the soil or seeds to be protected against fungal attack with an effective amount of a compound of the formula I as claimed in claim 1.